

**Amendments to the Claims:**

- 1 1 (Original). A method comprising the steps of:
- 2 a) determining that a datagram arriving at an interface between a network
- 3 and an edge resource is the initial datagram in a sequence of datagrams associated
- 4 in a common session as to which a new connection is requested;
- 5 b) providing a table of values indicating the probability that a new connection
- 6 will be allowed for each of a plurality of pipes;
- 7 c) determining the pipe membership of a determined initial datagram by
- 8 testing Quality of Service bits in said datagram and selecting from the provided table
- 9 a probability value corresponding to the determined pipe membership of the
- 10 determined initial datagram; and
- 11 d) determining from the selected probability value whether establishment of
- 12 a new connection will be allowed for the associated session and selectively
- 13 acknowledging the determined initial datagram and allowing a new connection for
- 14 the associated session based upon the determination of whether a new connection
- 15 will be allowed.
- 1 2 (Original). The method according to Claim 1, wherein the step of determining
- 2 allowability of a session and selectively acknowledging an initial datagram further
- 3 includes the steps of:
- 4 e) providing a random number;
- 5 f) performing a comparison of a current value of the random number with the
- 6 new connection allowance probability value selected from the table of values;
- 7 g) disregarding the initial datagram if the current state of the random number
- 8 generator is greater than the new connection allowance probability value; and
- 9 h) sending the initial datagram to an edge device or to an attached session
- 10 handling device wherein an acknowledgment signal can be computed and
- 11 transmitted if the current state of said random number generator is less than or
- 12 equal to the new connection allowance probability value.

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1 3 (Previously presented). The method according to Claim 2, wherein the random  
2 number and the new connection allowance probability value are both fractions  
3 between 0 and 1.0.

1 4 (Original). The method according to Claim 1, wherein the step of determining  
2 pipe membership further includes the step of comparing administratively specified  
3 values with the value of selected fields in a packet header of the datagrams.

1 5 (Original). The method according to Claim 4, wherein said selected fields of a  
2 packet header comprises the Differentiated Services Code Point (DSCP) field in a  
3 standard IP packet header.

1 6 (Original). The method according to Claim 4, wherein said selected fields of a  
2 packet header comprise the components used for MPLS tunnel designation.

1 7 (Original). The method according to Claim 1, wherein the step of determining  
2 whether a datagram constitutes a request for a new connection of a certain value  
3 further includes the step of comparing administratively specified values with the  
4 value of selected fields in a packet header of the datagram.

1 8 (Original). The method according to Claim 7, wherein the selected fields of a  
2 packet header comprise the Transmission Control Protocol (TCP) Synchronization  
3 (SYN) field in a standard TCP packet header.

1 9 (Original). The method according Claim 1 wherein the table of values is indexed  
2 according to pipe numbers with each corresponding table entry representing the  
3 new connection allowance probability corresponding to the associated pipe.

1 10 (Original). The method according to Claim 1, further comprising the step of

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2     responding to actual offered loads of simultaneous connections in each of said  
3     pipes relative to guaranteed connection numbers of those pipes by altering the  
4     values in the table.

1     11 (Original). The method according to Claim 10, further comprising the step of  
2     generating a signal indicative of the existence or nonexistence of excess connection  
3     capacity within the interface that affects a pipe flowing through the interface and  
4     wherein the altering of the table values is further responsive to the generated signal.

1     12 (Original). The method according to Claim 11, wherein the step of generating  
2     a signal includes manipulation of multiple components each of which corresponds  
3     to excess connection capacity within an interface, and further wherein the pipes  
4     within the interface are grouped according to which shared resources within the  
5     interface are currently dedicated to the processing of the grouped pipes.

1     13 (Currently amended). A method that controls the flow of datagrams including  
2     the steps of:  
3         a) providing, in an interface with Connection Allocation Technology (CAT),  
4         a table identifying pipes and associated new connection allowance probability for  
5         each pipe in said table;  
6         b) determining the identity of each datagram received in said interface by  
7         examining bits within said datagram;  
8         c) correlating datagram identity in step (b) with entries in the table; and  
9         d) allowing or disallowing a request for a new connection represented in the  
10     initial datagram of a new session based upon the value of the new connection  
11     allowance probability only if the datagram identified in step (b) matches the identity  
12     of a pipe in the table.

1     14 (Original). The method of Claim 13 wherein numerals are used to indicate the  
2     identity of pipes and the identity of datagrams.

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1 15 (Original). The method of Claim 14 further including the steps of providing a  
2 random number generator; and allowing or disallowing a request for a new  
3 connection represented in the initial datagram of a new session based upon the  
4 value of the new connection allowance probability and a present value of the  
5 random number generator.

1 16 (Original). A method of managing congestion in a communications network  
2 comprising the steps of:  
3 operatively monitoring, with a device for determining the existence of excess  
4 connection capacity, the existence of excess connection capacity within a  
5 communications device;  
6 generating a signal indicating existence or nonexistence of said excess  
7 connection capacity in said communications device; and  
8 using the generated signal to acknowledge or disregard requests for new  
9 connections in the form of initial packets of new sessions prior to initiating  
10 processing on the new connections.

1 17 (Original). Apparatus comprising:  
2 a) a memory in which a table of pipe identifiers and associated values for  
3 new connection allowance probabilities of transmission are stored;  
4 b) a buffer which stores a portion of a frame determined to be an initial frame  
5 of a new session;  
6 c) a random number generator that periodically outputs random numbers;  
7 d) a controller operatively coupled to said memory, said buffer and said  
8 random number generator, said controller:  
9 parsing information stored in said buffer to determine a pipe  
10 membership number for the initial frame,  
11 determining from said table a new connection allowance probability  
12 value corresponding to the determined pipe membership number,

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13                    comparing the probability value with a present value of the random  
14                    number generator, and  
15                    causing the initial frame to be acknowledged or disregarded based  
16                    upon the result of the comparison.

1    18 (Original). Apparatus according to Claim 17, further comprising an interface to  
2    an external controller separate from said apparatus, said interface being coupleable  
3    through the external controller to at least one other network device and altering the  
4    probability values stored in said memory to indicating new connection allowance  
5    probability values in response to algorithm constants and determined actual  
6    connection values in each identified pipe relative to guaranteed connection values  
7    for those pipes.

1    19 (Original). Apparatus according to Claim 17, wherein said controller alters the  
2    probability values indicating new connection allowance probability in response to  
3    algorithm constants and actual current connection number data for each of said  
4    pipes relative to guaranteed data connection values for those pipes.

1    20 (Previously presented). Apparatus according to one of Claims 18 or 19, further  
2    comprising a management component which initializes the algorithm constants and  
3    guaranteed data connection values for pipes.

1    21 (Original). Apparatus according to Claim 19, wherein said controller responds  
2    to a signal from a packet forwarding device communicating with said apparatus  
3    indicating the existence of excess connection capacity within that forwarding device  
4    that affects a pipe flowing through said apparatus by altering the table of values  
5    stored in said memory.

1    22 (Original). Apparatus according to Claim 18, wherein said interface passes to  
2    the external controller a signal from said apparatus indicating excess connection

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3 capacity within said apparatus that affects a pipe flowing through said apparatus.

1 23 (Original). Apparatus according to one of Claims 21 or 22, wherein said signal  
2 includes multiple components each of which corresponds to the existence of excess  
3 connection capacity within a different set of processing resources, said pipes  
4 flowing through said apparatus being grouped according to which shared resources  
5 they direct data to, and wherein the assignment of said values is performed  
6 separately for each group of pipes.

1 24 (Previously presented). Apparatus comprising:  
2 an interface between a network such as the Internet and an edge resource;  
3 and  
4 an excess connection capacity monitoring device operatively coupled to said  
5 interface, said excess connection capacity monitoring device monitoring connection  
6 numbers in said interface and in said edge resource and generating at least one  
7 signal indicating the existence of an excess connection capacity state in said  
8 interface and said edge device.

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